

**IN THE DRAWINGS:**

Formal drawings have been previously submitted.

**IN THE CLAIMS:**

Please amend claims 1, 5-8, 10, 12, 13, 14.

Claims 11 and 15 remain as-is.



CLEAN COPY OF AMENDED CLAIMS

1. A system for downloading firmware from a source module onto a controller of a storage medium with minimal latency of operation comprising:

(a) first source software means providing SCSI firmware for a disk drive and servo SCSI firmware for positioning said disk drive;

(b) second software means for providing a central processing unit having a selection means for choosing hardware simulated single or dual two-dimensional array means for temporary storing said SCSI firmware prior to placement onto a target peripheral controller for said disk drive;

(c) third software means for temporarily storing a different version of said firmware until said target controller has been accessed to identify the proper version of firmware required;

(d) fourth software means for checking the pre-existing firmware in said target controller to determine whether an updated firmware version will be required for a subsequent download.

4. A system for downloading SCSI firmware and servo firmware in a rapid fashion onto a target control module, said system comprising:

(a) a source software means for said firmware and SCSI servo firmware;

(b) software simulated central processing means for receiving said firmware from said source software means and utilizing a software emulated local memory means for separate storage areas for said SCSI firmware and for said servo firmware;

(c) connection means from said software emulated local memory means over to a selected one of a plurality of disk drives for temporary storage;

(d) peripheral controller means for loading said SCSI firmware into a first flash PROM and for loading said servo SCSI firmware into a second servo flash PROM;

(e) means to Write said firmware from said first flash and second flash PROMs onto a targeted peripheral controller for a disk unit.

5. The system of claim 4 wherein said source software means includes control data received from the World Wide Web.

6. The system of claim 4 wherein said software simulated central processing means includes:

(b1) software means for recognizing the number of bytes of firmware to be downloaded;

(b2) means for selecting a software emulated buffer array size which most closely approximates said recognized number of bytes to be downloaded.

7. The system of claim 4 wherein said software emulated central processing means includes:

(b3) software inquiry means to said target controller to acquire identification information;

(b4) software means to determine, from said identification information, what version of firmware will be downloaded to said target controller.

8. A system for downloading the appropriate SCSI firmware onto a target module controller and overcoming the normal capacity limitations of temporary buffer storage comprising:

(a) software source means for providing microcode firmware for a target controller;

(b) software emulated processor means having a temporary implemented software first and second two-dimensional buffer array means for receiving and buffering said SCSI firmware and SCSI servo firmware destined for said target controller without adding any additional hardware;

(c) software control means for transferring said SCSI firmware and servo firmware onto a targeted peripheral controller for a disk unit;

(d) a library exported interface (USERMAINTREQUEST) for issuing a download command request and an inquiry command to query the said target controller;

(e) software means to access the appropriate firmware release numbers and servo release numbers to enable a selection of the appropriately proper firmware;

(f) software selection means for selecting the appropriate size of said temporary implemented software first and second two-dimensional buffer array means to most efficiently store said selected proper firmware.

10. The system of claim 8 wherein said inquiry command includes:

(g) means to check and compare the pre-existing firmware in said target controller to determine whether new updated firmware is required.

11. The system of claim 8 which includes means for checking to indicate that the proper firmware has been downloaded to the proper target controller module.

12. A software method of selecting and downloading the appropriate SCSI firmware and servo firmware for a selected target control module comprising the steps of:

- (a) providing a plurality of separate software emulated temporary storage media for holding different versions of SCSI firmware appropriate for different types of target control modules;
- (b) utilizing a DFAST utility program for initiating a firmware download to a target control module, said DFAST program functioning to download firmware to SCSI devices;
- (c) inquiring as to the identity and firmware requirements of a selected target control module;
- (d) fetching, by said DFAST utility program, of the appropriate firmware file from said storage media;
- (e) selecting a single or double temporary software two-dimensional buffer array appropriate to the byte count of said appropriately selected firmware for temporary storage;
- (f) downloading the selected firmware by said DFAST utility onto said target control module.

13. The method of claim 12 wherein step (c) includes the step of:

(c1) checking the pre-existing firmware in said target controller to determine whether or not said pre-existing firmware requires any updating from the selected firmware on the selected storage media.



14. A system utilizing software means for rapid downloading, in one command cycle, of SCSI firmware and servo firmware into a target control module, comprising:

(a) first software means for initiating a SCSI Inquiry Command to said target control module via a Command Descriptor Block;

(b) second software means to query a designated target control module with information from a Page Code Field;

(c) third software means for enabling access to and acquiring a firmware page number and a firmware version number for said target control module;

(d) downloading said SCSI firmware data using selected sizes of software implemented two-dimensional buffer arrays;

(e) passing said SCSI firmware data onto said target control module.

15. (As-Is) The system of claim 14 which includes:

(f) means to sense when said SCSI Inquiry Command initiates an illegal request.